Research Paper | Education | E-ISSN No : 2454-9916 | Volume : 11 | Issue : 3 | March 2025

POST-COVID PERSPECTIVES ON ONLINE TEACHING AND LEARNING: A STUDY OF STUDENTS AND TEACHERS IN GUWAHATI, ASSAM

Dr. Daisy Nath Choudhury

Assistant Professor, Department of Education, Karmashree Hiteswar Saikia College, Guwahati, India

ABSTRACT

The COVID-19 pandemic accelerated the shift to online education, significantly impacting students and teachers in Guwahati, Assam. This study examines the perceptions of both groups regarding online teaching-learning, focusing on its effectiveness, challenges, and opportunities. A survey of 200 students and 70 teachers revealed mixed responses. While students appreciated the flexibility and digital literacy improvements, they faced infrastructure limitations (60% reported poor internet access) and engagement issues (55% struggled with distractions). Teachers found online teaching challenging, with 65% experiencing difficulties in using digital tools and 70% struggling to maintain student engagement. Key challenges included internet connectivity issues, lack of proper training, and reduced student interaction. The study highlights the necessity of a structured hybrid education model integrating online and offline learning for a balanced approach. Improved infrastructure, teacher training, and student support programs are essential for enhancing the effectiveness of digital education. Policy recommendations focus on strengthening digital tools, providing institutional support, and developing sustainable e-learning strategies. The findings emphasize the importance of pedagogical innovation, technological advancement, and policy-driven initiatives to create a resilient and effective education system post-pandemic.

KEYWORDS: Digital Literacy, Hybrid Learning, Online Education, Student Engagement, Teacher Perception

INTRODUCTION

The COVID-19 pandemic dramatically transformed the global education landscape, accelerating the adoption of online teaching and learning (Unger & Meiran, 2020). E-learning, defined as the use of internet-based technologies for knowledge dissemination, has emerged as a significant mode of education (Nashir & Laili, 2021). This shift has led to debates about its effectiveness, accessibility, and impact on student engagement and learning outcomes (Coman et al., 2020). In India, where digital literacy and infrastructure vary significantly across urban and rural regions, the transition to online education has presented both opportunities and challenges (Khan et al., 2020).

The National Education Policy (NEP) 2020 underscores the need for digital integration in education to enhance learning outcomes and develop cognitive abilities such as critical thinking and problem-solving (Banerjee et al., 2021). Despite these policy-driven efforts, students and teachers have expressed mixed perceptions regarding online education. While some studies highlight increased technological literacy and convenience (Gopal et al., 2021), others report issues related to engagement, assessment credibility, and technical difficulties (Choi et al., 2021). Students often struggle with maintaining discipline in self-paced learning environments, whereas teachers face challenges in adapting to virtual teaching tools without adequate training (Aliyyah et al., 2020).

Moreover, infrastructure constraints such as internet connectivity, availability of digital devices, and familiarity with online tools significantly influence the effectiveness of e-learning (Gu et al., 2021). A study by Szopiński & Bachnik (2022) found that while students appreciated the flexibility of online classes, they preferred traditional classrooms due to better interaction and structured learning experiences. Similarly, research by Huang et al. (2021) emphasized that the success of e-learning depends not only on technological advancement but also on pedagogical adaptation and institutional support.

This study aims to analyze students' and teachers' perceptions of online learning, focusing on its impact on student engagement, teaching practices, and institutional preparedness. By identifying key challenges and advantages, the research seeks to provide insights into how online education can be effectively integrated into the Indian education system.

MATERIALS AND METHODS

Study Design: This study follows a descriptive quantitative research design to analyze the perception of students and teachers regarding online education.

Study Area and Population: The study was conducted in Guwahati, the largest city in Assam and a major educational hub in Northeast India. The respondents included students and teachers from schools and colleges in Guwahati.

Sampling Method and Sample Size: A convenient sampling technique was used to select the respondents. The study included 200 student respondents from various educational institutions and 70 teacher respondents teaching different subjects at school and college levels.

Data Collection: A structured questionnaire with a five-point

Likert scale was used to collect responses from students and teachers. The questionnaire covered students' perception, teachers' perception, Challenges, etc.

Data Analysis: The collected data was analyzed using Statistical Package for Social Sciences (SPSS). Descriptive statistics were used to summarize responses, and cross-tabulation was done to compare perceptions among different demographic groups.

RESULTS AND DISCUSSION

Demographic Profile of Respondents

Category	Variables	Students (N=200)	Teachers (N=70)
Gender	Male	85 (42.5%)	30 (42.8%)
	Female	115 (57.5%)	40 (57.2%)
Age Group	Below 20	140 (70%)	-
	21-30	50 (25%)	20 (28.6%)
	31-50	10 (5%)	40 (57.2%)
Experience with Online Learning	1-2 years	110 (55%)	50 (71.4%)
	3+ years	90 (45%)	20 (28.6%)

Table 1: Demographic profile of respondents

The study surveyed 200 students and 70 teachers, with a nearly equal gender distribution. Most students (70%) were below 20 years, while teachers were predominantly aged 31-50 (57.2%). Students had 1-2 years (55%) of online learning experience, whereas teachers had more experience (71.4% with 1-2 years). This highlights a younger student demographic with limited exposure to online education, while teachers had relatively more experience.

Tools Used for Online Classes

Tools	Frequency of Use (N=270)
Google Classroom	130
Google Meet	115
Zoom	100
YouTube	75
WhatsApp	40
Skype	25
Others	10

Table 2: Tools used for online classes

Google Classroom (130), Google Meet (115), and Zoom (100) were the most commonly used tools for online education. YouTube (75) and WhatsApp (40) had moderate use, while Skype (25) and other platforms (10) were least preferred. This indicates a reliance on structured learning management systems over informal communication tools.

Students' Perception of Online Class (Exploratory Factor Analysis)

Factor	Statements Retained	% of Variance Explained	Communality
Impact	Online classes helped me understand concepts better	73.34%	0.84
	Online learning improved my digital literacy	9.15%	0.82
	Online education is as effective as classroom learning	7.56%	0.87
Comfortability	I feel comfortable using online learning tools	39.52%	0.66
	Online classes are convenient and flexible	24.96%	0.72
Support from Teachers	Teachers provided enough support and resources	71.61%	0.53
	Teachers encouraged discussions in online classes	9.44%	0.69

Table 3: Students' Perception of Online Class (Exploratory Factor Analysis)

Students found online classes improved conceptual understanding (73.34%) and digital literacy (9.15%). However, only 7.56% felt it was as effective as traditional learning. Comfortability factors included ease of tool usage (39.52%) and flexibility (24.96%). Teacher support was crucial, with 71.61% receiving adequate resources and 9.44% encouraged discussions.

Teachers' Perception of Online Class (Descriptive Statistics for Teaching Practice, Efficacy, Training, and Support)

Category	N	Min	Max	Mean	Std. Deviation
Teaching Practice	70	3.17	4.33	3.60	0.33
Efficacy	70	1.80	5.00	3.40	0.78
Training and Support	70	1.00	4.17	2.86	0.72

Teachers rated their teaching practice at a mean of 3.60 (SD = 0.33), efficacy at 3.40 (SD = 0.78), and training/support at 2.86 (SD = 0.72). While teaching practice was rated positively, lower scores for training suggest a lack of institutional preparedness in online teaching.

Reasons for Not Conducting Online Classes (Teachers' Perception)

Reason	Frequency (%)
Technical issues (Internet, Power)	60%
Believe traditional teaching is better	50%
Lack of institutional support	45%
No training on online teaching	40%
Subject requires physical demonstration	35%

Table 5: Reasons for Not Conducting Online Classes (Teachers' Perception)

Teachers cited technical issues (60%) and a belief in traditional teaching (50%) as major reasons for avoiding online classes. Lack of institutional support (45%) and training (40%) were also concerns. Additionally, 35% found online classes unsuitable for subjects requiring physical demonstrations.

Reasons for Not Conducting Online Classes (Students' Perception)

Reason	Frequency (%)
Online class is less effective than classroom learning	82.4%
Difficult to grasp concepts in online mode	65%
Lack of infrastructure (smartphones, internet)	50%
Not comfortable using online tools	30%

Students largely felt online learning was less effective (82.4%) and struggled to grasp concepts (65%). Infrastructure limitations (50%) and discomfort with online tools (30%) were additional barriers. This reflects significant challenges in digital learning adoption, especially for resource-constrained students.

Challenges of Online Education

1. **Infrastructure Issues:** A significant portion of students (60%) encountered internet connectivity problems, which hindered their ability to attend online classes seamlessly. Unstable internet connections often resulted in disrupted lectures, missed content, and difficulty in participating in real-time discussions. Additionally, 45% of students lacked access to a personal laptop or smartphone, further limiting their ability to engage effectively in digital learning. Many students had to rely on shared devices or outdated technology, making it challenging to complete assignments and attend virtual sessions consistently. These infrastructure constraints created barriers to an equitable and efficient online learning experience.
2. **Technical Challenges:** Teachers also faced challenges in adapting to digital platforms, with 65% reporting difficulty in using online teaching tools effectively. Many educators lacked prior training in handling virtual classrooms, making it challenging to deliver lessons interactively. Additionally, 40% of students experienced technical glitches, particularly during exams and assignments, leading to frustration and performance issues. System crashes, software compatibility problems, and login failures disrupted the learning process and created stress among students. These technical barriers highlighted the need for improved digital literacy and robust technological support to ensure a smoother transition to online education.
3. **Engagement Issues:** Maintaining student engagement in an online environment proved to be one of the most significant challenges, with 70% of teachers stating that keeping students attentive was difficult. The lack of face-to-face interaction and classroom dynamics resulted in reduced participation and enthusiasm. Furthermore, 55% of students admitted to feeling easily distracted while attending online classes. The presence of social media, household distractions, and the absence of a structured learning environment contributed to low concentration levels. These engagement issues emphasized the necessity of interactive teaching strategies and better-designed virtual learning environments to sustain student interest and participation.

CONCLUSIONS

The shift to online education in Guwahati, Assam, presented both opportunities and challenges for students and teachers. While online learning improved flexibility and digital literacy, it also posed significant hurdles, including poor internet access, lack of devices, and technical difficulties. Many students struggled with engagement due to distractions at home, and teachers found it challenging to maintain student participation without in-person interaction. The study indicates that while digital learning can supplement traditional education, it cannot fully replace the classroom experience. The limited training of educators in handling online platforms further weakened the effectiveness of online teaching. Additionally, infrastructural deficits, such as unstable internet connectivity and insufficient institutional support, contributed to a lower preference for online education. Teachers expressed concerns about assessment credibility, while students found self-paced learning difficult to manage. Moving forward, a hybrid learning model integrating online and offline education is essential for a more inclusive and efficient system. Enhancing digital infrastructure, providing targeted teacher training, and designing interactive online courses are necessary steps to optimize learning outcomes. Addressing these challenges through policy interventions and strategic planning can improve the long-term sustainability of digital education.

RECOMMENDATIONS

1. **Hybrid Learning Approach:** A hybrid learning model, combining online and in-person teaching, can help balance the advantages of both modes. Institutions should integrate virtual platforms for supplementary learning while maintaining traditional classroom sessions for core teaching. Blended learning strategies, such as flipped classrooms and interactive digital assignments, should be encouraged. Educators should also explore asynchronous learning tools like recorded lectures and discussion forums

to enhance accessibility.

2. **Improved Infrastructure:** Strengthening digital infrastructure is critical for an effective online education system. Government and educational institutions should invest in high-speed internet connectivity, particularly in underserved areas. Providing affordable digital devices, such as tablets or laptops, to students from low-income backgrounds will bridge the digital divide. Institutions must also ensure that online platforms are user-friendly and equipped with reliable servers to minimize disruptions.
3. **Teacher Training:** Comprehensive training programs should be implemented to enhance teachers' proficiency in digital tools. Workshops and certification programs on e-learning methodologies, digital assessment techniques, and virtual student engagement should be conducted regularly. Educators must be trained to use platforms like Google Classroom, Zoom, and Microsoft Teams effectively. Additionally, institutions should offer continuous technical support to help teachers troubleshoot issues related to online teaching.
4. **Student Support Programs:** To address engagement challenges, institutions should establish structured student support systems. Online mentoring, peer-learning networks, and virtual counseling services can help students navigate the online learning environment effectively. Digital literacy programs should be introduced to familiarize students with e-learning tools. Additionally, providing recorded lectures, interactive exercises, and gamified learning methods can increase participation and retention.
5. **Institutional Policies:** Institutions must develop clear policies for sustainable digital education. Online learning frameworks should be standardized, ensuring accessibility and inclusivity for all students. Assessment methods must be refined to prevent technical disruptions and maintain credibility in online examinations. Institutions should also establish contingency plans, including alternative learning methods during technical failures. Moreover, policies should emphasize equal opportunities by offering financial aid programs for students requiring digital resources.

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